

CLIPPEDIMAGE= JP401179455A

PAT-NO: JP401179455A

DOCUMENT-IDENTIFIER: JP 01179455 A

TITLE: MANUFACTURE OF SEMICONDUCTOR DEVICE

PUBN-DATE: July 17, 1989

INVENTOR-INFORMATION:

NAME

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ASSIGNEE-INFORMATION:

NAME

FUJI XEROX CO LTD

COUNTRY

N/A

APPL-NO: JP63001557

APPL-DATE: January 7, 1988

INT-CL (IPC): H01L029/78;H01L021/22 ;H01L021/265

US-CL-CURRENT: 438/297,438/FOR.199

ABSTRACT:

PURPOSE: To form low-concentration diffused layers thinly in full by a method wherein an impurity in an SOG film is diffused in a substrate to form first diffused layers and ions are implanted in a self-matching manner using the thick gate sidewall parts of this SOG film and a gate electrode as masks to form second diffused layers.

CONSTITUTION: A gate oxide film 2 is formed on a substrate 1 and moreover, a gate electrode 3 is formed on this gate oxide film 2. A phosphorus or arsenic-doped SOG film 4 is coated from over the electrode 3 and thereafter, an impurity is diffused from the film 4 to form first diffused

layers 5. Then,
ions are implanted in a self-matching manner using the
thick gate sidewall
parts of the film 4 and the gate electrode as masks and
successively, the whole
is heated to perform an activation and second diffused
layers 6 are formed.
Finally, as the film 4 becomes thicker than other part at
the parts of both
sides of the electrode 3, the first diffused layers 5
become thick at parts,
which correspond to both sides of the electrode 3, of the
layers 5 and are
formed very thinly at other parts other than the above
parts.

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CLIPPEDIMAGE= JP408195487A

PAT-NO: JP408195487A

DOCUMENT-IDENTIFIER: JP 08195487 A

TITLE: MANUFACTURE OF SURFACE TUNNEL TRANSISTOR

PUBN-DATE: July 30, 1996

INVENTOR-INFORMATION:

NAME

KAWAURA, HISAO

ASSIGNEE-INFORMATION:

NAME

NEC CORP

COUNTRY

N/A

APPL-NO: JP07003680

APPL-DATE: January 13, 1995

INT-CL (IPC): H01L029/66;H01L029/06 ;H01L029/78

ABSTRACT:

PURPOSE: To enlarge an interband tunnel current when applying voltage to a drain, by diffusing impurities in high concentration into a semiconductor substrate from an oxide film containing impurities in high concentration thereby forming a shrunk and retreated drain in a sharp impurity profile, with the sample at high temperature for a short time.

CONSTITUTION: An SOG 107, which contains phosphor in high concentration, is applied all over the surface of a wafer, and annealing is performed with an infrared ray lamp so as to dope the inside of an n-substrate 101 with phosphor. At this time, the source region covered with an oxide film is not doped with phosphor, and only the drain region where the n-substrate 101 is exposed is

doped with phosphor. Due to the annealing for a short time at high temperature, an n⁺-diffusion layer 106 adjacent to a gate polysilicon 103 is made shallowly in high concentration, and section adjacent to the gate polysilicon 103 shrinks and retreats, and the impurity profile becomes sharp. As a result, an interband tunnel current which flows when voltage is applied to the drain becomes large, and high-speed capacity of the element can be materialized.

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| | Type | L # | Hits | Search Text | DBs | Time Stamp |
|---|------|-----|------|--|--|---------------------|
| 1 | BFS | L1 | 1420 | (form or forming or formed) adj3 (barrier adj layer) same (diffuse or diffusion) | USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B | 2003/01/02 18:52 |
| 2 | BFS | L3 | 0 | 1 and 2 | USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B | 2003/01/02 18:53 |
| 3 | BFS | L2 | 53 | (form or forming or formed) adj3 ((silicon adj oxide adj glass) or SOG) same (impurity or impurities) | USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B | 2003/01/02 19:09 |
| 4 | BFS | L4 | 2931 | diffusion adj barrier adj layer | USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD E | 2003/01/02 19:11 |
| 5 | BFS | L5 | 1351 | 4 same (SOG or (silicon oxide)) | USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD E | 2003/01/02 19:12 |

| | Type | L # | Hits | Search Text | DBs | Time Stamp |
|---|------|-----|------|---|--|---------------------|
| 6 | BRS | L6 | 79 | 5 same (impurity or impurities) | USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B | 2003/01/02 19:28 |
| 7 | BRS | L7 | 8 | (diffus\$6) adj10 (impurit\$6) adj10 (SOG) | USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B | 2003/01/02 19:31 |